

WHAT IS CLAIMED IS:

1. A method for inspecting a reticle, comprising:
 - 5 forming an aerial image of the reticle with an inspection system at a wavelength different from a wavelength of an exposure system;

correcting the aerial image for differences between modulation transfer functions of the inspection system and the exposure system such that the corrected
10 aerial image is substantially equivalent to an image of the reticle that would be printed onto a specimen by the exposure system at the wavelength of the exposure system; and

detecting defects on the reticle using the corrected aerial image.
 - 15 2. The method of claim 1, further comprising altering a parameter of the inspection system in response to variations in a parameter of the exposure system.
 3. The method of claim 1; further comprising altering the corrected aerial image to
20 determine images of the reticle that would be printed onto the specimen by the exposure system at various levels of a parameter of the exposure system.
 4. The method of claim 1, further comprising altering the corrected aerial image to
25 determine images of the reticle that would be printed onto the specimen by the exposure system at various focus settings of the exposure system.
 5. The method of claim 1, further comprising altering the corrected aerial image to
determine images of the reticle that would be printed onto the specimen by the exposure
system at various dose settings of the exposure system.

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6. The method of claim 1, further comprising altering the corrected aerial image to determine variations across the image that would be printed onto the specimen by the exposure system due to variations of a parameter of the exposure system across the reticle.

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7. The method of claim 1, further comprising altering the corrected aerial image to determine images of the reticle that would be printed onto the specimen by a plurality of exposure systems of the same make and model as the exposure system.

10 8. The method of claim 1, further comprising altering the corrected aerial image to determine images of the reticle that would be printed onto the specimen by a plurality of exposure systems used in a common fabrication facility.

9. The method of claim 1, wherein a substantial portion of the defects comprises
15 defects that would be printed onto the specimen by the exposure system using the reticle.

10. A method for inspecting a reticle, comprising:

forming an aerial image of the reticle with an inspection system at a wavelength
20 different from a wavelength of an exposure system, wherein the inspection system has a modulation transfer function approximately equal to a modulation transfer function of the exposure system; and

detecting defects on the reticle using the aerial image.

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11. The method of claim 10, further comprising altering a parameter of the inspection system in response to variations in a parameter of the exposure system.

12. A system configured to inspect a reticle, comprising:
- an inspection system configured to form an aerial image of the reticle at a wavelength different from a wavelength of an exposure system; and
- 5 a processor configured to correct the aerial image for differences between modulation transfer functions of the inspection system and the exposure system such that the corrected aerial image is substantially equivalent to an image of the reticle that would be printed onto a specimen by the exposure
- 10 system at the wavelength of the exposure system and to detect defects on the reticle using the corrected aerial image.
13. The system of claim 12, wherein the processor is further configured to alter a parameter of the inspection system in response to variations in a parameter of the
- 15 exposure system.
14. The system of claim 12, wherein the processor is further configured to alter the corrected aerial image to determine images of the reticle that would be printed onto the specimen by the exposure system at various levels of a parameter of the exposure system.
- 20 15. The system of claim 12, wherein the processor is further configured to alter the corrected aerial image to determine images of the reticle that would be printed onto the specimen by the exposure system at various focus settings of the exposure system.
- 25 16. The system of claim 12, wherein the processor is further configured to alter the corrected aerial image to determine images of the reticle that would be printed onto the specimen by the exposure system at various dose settings of the exposure system.

17. The system of claim 12, wherein the processor is further configured to alter the corrected aerial image to determine variations across the image that would be printed onto the specimen by the exposure system due to variations of a parameter of the exposure system across the reticle.

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18. The system of claim 12, wherein the processor is further configured to alter the corrected aerial image to determine images of the reticle that would be printed onto the specimen by a plurality of exposure systems of the same make and model as the exposure system.

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19. The system of claim 12, wherein the processor is further configured to alter the corrected aerial image to determine images of the reticle that would be printed onto the specimen by a plurality of exposure systems used in a common fabrication facility.

15 20. The system of claim 12, wherein a substantial portion of the defects comprises defects that would be printed onto the specimen by the exposure system using the reticle.